Attorney Docket No. 039US1 Serial No. 10759,811 Filing Date: January 16, 2004

Title: Surgical Access System and Related Methods

## In the Claims:

## Please amend the claims as follows:

1. (Currently Amended) A system for accessing a surgical target site within a spine, comprising: a distraction assembly adapted comprising at least two dilators adapted for sequential insertion to said surgical target site to create a distraction corridor to said surgical target site, a larger of said at least two dilators having an exterior circumference;

a primary retractor assembly having a handle assembly and a first retractor blade, a second retractor blade, and a third retractor blade plurality of retractor blades removably coupled to said handle assembly, said handle assembly adapted to move said first, second and third plurality of retractor blades abutting each other in between a closed position and forming a closed perimeter, said perimeter defining a lumen having an internal circumference larger than said external circumference of said larger dilator such that said and an open position, said closed position being characterized by said first, second and third retractor blades being positioned generally adjacent to one another, said open position being characterized by said first, second and third retractor blades being positioned generally away from one another, wherein said first, second and third said plurality of retractor blades are adapted to can be introduced to said surgical target site simultaneously over said distraction assembly larger dilator while in said closed position, to said surgical target site and thereafter moved to said said plurality of retractor blades being movable relative to each other to an open position forming an open perimeter and wherein said internal circumference is enlarged relative to said closed position open position to create and maintain an operative corridor to said surgical target site; and

a supplemental retractor assembly having an arm with a fourth an additional retractor blade removably coupled to said arm, said arm adapted to be being selectively coupleable coupled to said handle assembly of said primary retractor assembly, and said fourth retractor subsequent to moving said plurality of retractor blades into said open position such that said additional blade adapted to be introduced into said surgical target site and moved to expand said operative corridor fills a space in said open perimeter.

2. (Currently Amended) The system of claim 1, wherein said distraction assembly includes a K-wire adapted to be introduced to said surgical target site and an initial dilator capable of being slideably passed over said K wire to perform initial distraction.

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3. (Currently Amended) The system of claim 1, wherein said distraction assembly includes a

plurality of at least three sequential dilators.

4. (Currently Amended) The system of claim [[2]] 1, wherein said initial dilator is a split dilator

capable of being split after introduction to perform said initial distraction plurality of retractor

blades is three retractor blades.

5. (Previously Presented) The system of claim 1, further comprising at least one shim member

adapted to be coupled to at least one of said retractor blades, said shim member including a

contiguous extension dimensioned to extend past said retractor blade into the surgical target site.

6. (Currently Amended) The system of claim 5, wherein at least one of said distraction

assembly[[,]] and one or more of said retractor blades, and said at least one shim member

includes at least one stimulation electrode.

7. (Currently Amended) The system of claim 6, further comprising a control unit capable of

electrically stimulating said at least one stimulation electrode, sensing a response of a nerve

depolarized by said stimulation, determining at least one of a proximity and a direction from at

least one of said initial distraction assembly system, and one or more of said retractor blades, and

said at least one shim member to the nerve based upon the sensed response, and communicating

said at least one of proximity and direction to a user.

8. (Currently Amended) The system of claim 7, further comprising an electrode configured to

sense a neuromuscular said EMG response of [[a]] said muscle coupled to said depolarized

nerve, the electrode being operable to send the response to the control unit.

9. (Currently Amended) The system of claim [[2]], wherein said K wire has a first stimulation

electrode at a distal tip of the K wire said arm of said supplemental retractor assembly couples to

said handle assembly.

10. (Cancelled)

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11. (Previously Presented) The system of claim 1, wherein said system for establishing an operative corridor to a surgical target site is configured to establish said operative corridor via at least one of a posterior, anterior, postero-lateral, and a lateral, trans-psoas approach.

- 12. (Currently Amended) The system of claim 7, further comprising a handle coupled to at least one of said initial distraction assembly[[,]] and one or more of said retractor blades, and said at least one shim member, the handle having at least one button for initiating delivering the electrical stimulation from said control unit to said at least one stimulation electrode.
- 13. (Currently Amended) The system of claim 7, wherein the control unit comprises a display operable to display [[an]] <u>said electromyographic (EMG)</u> <u>EMG</u> response of the muscle.
- 14. (Original) The system of claim 7, wherein the control unit comprises a touch-screen display operable to receive commands from a user.
- 15. (Currently Amended) The system of claim 7, wherein the stimulation electrodes are positioned near a distal end of at least one of the initial distraction system, and one or more of said retractor blades, and said at least one shim member.
- 16. (Currently Amended) A method of accessing a surgical target site within a spine, comprising the steps of:
- (a) creating a distraction corridor to the surgical target site <u>using a distraction assembly</u> comprising at least two dilators adapted for sequential insertion to said surgical target site;
- (b) removably coupling a first retractor blade, a second retractor blade, and a third retractor blade plurality of retractor blades of a retraction assembly to a handle assembly of said retractor assembly, said handle assembly being capable of moving said first, second and third retractor plurality of retractor blades from a closed position to an open position, said closed position being characterized by said first, second and third plurality of retractor blades being positioned generally adjacent to abut one another and form a closed perimeter, [[and]]] said open position characterized by said first, second and third plurality of retractor blades being positioned generally away from one another and forming an open perimeter;

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- (c) simultaneously introducing said first, second and third plurality of retractor blades over said distraction assembly into said distraction corridor while in said closed position;
- (d) actuating said handle assembly to open first, second and third said plurality of retractor blades to create an operative corridor to said surgical target site;
- (e) coupling a fourth an additional retractor blade to said handle retractor assembly after said first, second and third plurality of retractor blades have been moved to said open position such that said additional retractor blade fills a space in said open perimeter created when said plurality of retractor blades were moved from said closed position to said open position; and
  - (f) moving said fourth additional retractor blade to expand said operative corridor.
- 17. (Currently Amended) The method of claim 16, wherein said step of creating a distraction corridor is accomplished by introducing a K-wire to said surgical target site, and thereafter slideably advancing at least one dilator one of said at least two dilators over said K-wire, and then slidably advancing a second of said at least two dilators over said first dilator.

## 18. -19. (Cancelled)

- 20. (Previously Presented) The method of claim 16, further comprising the steps of performing neuromonitoring during at least one of steps (a), (c), (d), and (f), and communicating a result of said neuromonitoring to a user.
- 21. (Currently Amended) The method of claim 20, wherein said step of creating a distraction corridor is accomplished by introducing a K-wire to said surgical target site, and thereafter slideably advancing at least one dilator one of said at least two dilators over said K-wire, and then slidably advancing a second of said at least two dilators over said first dilator and wherein the result of said neuromonitoring is an EMG response.
- 22. (Currently Amended) The method of claim 21, wherein the result is indicative of at least comprises at least one of the presence, distance, and direction of neural structures relative to at least one of said K-wire, one or more of said dilators dilator, and one or more of said plurality of retractor blades first retractor blade, second retractor blade, third retractor blade, and fourth retractor blade.

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23. (New) The system of claim 7, wherein said control unit is configured to determine said

at least one of nerve proximity and nerve direction by determining a threshold stimulation level

required to evoke said EMG response.

24. (New) The system of claim 23, wherein said control unit determines said threshold

stimulation by establishing a first bracket containing said threshold stimulation and bisecting said

bracket to form a smaller second bracket containing said threshold stimulation.

25. (New) The method of claim 22, wherein the result is a threshold stimulation level

required to evoke said EMG response.

26. (New) The method of claim 25, wherein said threshold stimulation level is determined by

establishing a first bracket containing said threshold stimulation level and then bisecting said

bracket to form a smaller second bracket containing said threshold stimulation level.